

Intext Questions – Page 190

Q1. What is meant by power of accommodation of the eye?

✓ **Answer:**

The **power of accommodation** of the eye is the ability of the eye lens to **adjust its focal length** to clearly focus on both **near** and **distant objects** by changing its shape (thickness).

This is done with the help of **ciliary muscles**.

Q2. A person with a myopic eye cannot see objects beyond 1.2 m distinctly. What should be the type of corrective lens used to restore proper vision?

✓ **Answer:**

The person is suffering from **myopia (near-sightedness)**.

To correct it, a **concave lens (diverging lens)** of suitable focal length is used so that distant objects can be focused on the retina.

Q3. What is the far point of the normal human eye?

✓ **Answer:**

The **far point** of the normal human eye is **infinity**.

This means a normal eye can see distant objects as far as it wants.

Q4. What is the near point of the human eye with normal vision?

✓ **Answer:**

The **near point** of a normal human eye is **25 cm**.

This is the closest distance at which objects can be seen clearly without strain.

Intext Questions – Page 197

Q1. What is the function of iris in the human eye?

✓ **Answer:**

The **iris** controls the **size of the pupil**, thereby regulating the amount of **light entering** the eye.

It acts like a natural diaphragm.

Q2. How do we see nearby and distant objects?

✓ **Answer:**

- For **nearby objects**: **Ciliary muscles contract**, lens becomes **thicker**, focal length decreases.
 - For **distant objects**: **Ciliary muscles relax**, lens becomes **thinner**, focal length increases.
- This adjustment is called **accommodation**.
-

Q3. What happens to the image distance in the eye when we increase the distance of an object from the eye?

✓ **Answer:**

The **image distance remains constant** (equal to the distance between lens and retina). To maintain clear image, the **lens adjusts its focal length**.

Q4. Why do stars twinkle?

✓ **Answer:**

Due to **atmospheric refraction**. The starlight bends as it passes through layers of air with varying densities.

This causes **apparent position of stars to change** slightly, and they appear to twinkle.

Q5. Explain why the planets do not twinkle.

✓ **Answer:**

Planets appear larger and closer to Earth, so they act like a **collection of point sources**. Twinkling effects **cancel out** due to averaging, hence they appear steady.

 **Intext Questions – Page 199**

Q1. Why does the sun appear reddish early in the morning?

✓ **Answer:**

At sunrise, sunlight travels a longer distance through the atmosphere.

Blue and shorter wavelengths scatter away, and only **red light reaches our eyes**, making the sun appear reddish.

Q2. Why does the sky appear blue?

✓ **Answer:**

Due to **scattering of sunlight** by the atmosphere.

Blue light (shorter wavelength) is scattered the most by air molecules, hence the sky appears blue to us.


Brain Booster Academy

WHERE SUCCESS MEETS